

PATENT APPLICATION
Attorney Docket No.EL2003/E009

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS: KLEIN, Heinz-Peter *et al.*

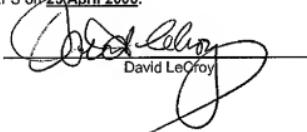
SERIAL NO.: 10/577 761 **GROUP ART UNIT:** 1713

FILED: 29 January 2007 **EXAMINER:** REDDY, Karuna P.

ENTITLED: REDISPERSIBLE DISPERSION POWDERS FOR HEAT INSULATING COMPOSITE SYSTEM

CERTIFICATE of TRANSMISSION UNDER 37 C.F.R. § 1.8

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David LeCroy

Commissioner for Patents
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REPLY UNDER 37 C.F.R. § 1.116

Dear Sir:

This Reply is in response to the final Office Action mailed 28 February 2008. In reply to that communication, Applicants submit the following Amendments and Remarks –

OK TO ENTER: /KR/

04/28/2008

AMENDMENTSIn the Claims:

1-11. (Canceled)

12. (Previously presented) Process for producing thermal insulation adhesives and reinforcing mortars comprising:

polymerizing one or more monomers having one or more carbonyl groups, wherein at least one of the one or more carbonyl groups are chosen from aldehyde and keto groups, forming one or more copolymers having one or more carbonyl groups,

stabilizing the one or more copolymers with at least one protective colloid,

drying the stabilized copolymers forming a dispersion powder,

homogenously mixing the dispersion powder with one or more formulation constituents thereby forming a dry mix, and

mixing the dry mix with water thereby producing the thermal insulation adhesives and reinforcing mortars.

13. (Previously presented) Process according to claim 12 wherein the one or more monomers having carbonyl groups are chosen from acrolein, vinyl acetoacetate, allyl acetoacetate, diacetoneacrylamide, vinyl methyl ketone, acetoacetylated hydroxyalkyl acrylates and acetoacetylated hydroxyalkyl methacrylates.

14. (Previously presented) Process according to claim 12 wherein the one or more copolymers having one or more carbonyl groups are present in an amount of from 0.1 to 15% by weight, based on total weight of the copolymer.

15. (Previously presented) Process according to claim 12 wherein the one or more copolymers having one or more carbonyl groups further comprise at least one monomer chosen from vinyl esters, vinyl aromatics, acrylic esters, methacrylic esters, fumaric esters and maleic esters.

16. (Previously presented) Process according to claim 12 wherein the one or more copolymers having one or more carbonyl groups further comprise at least one monomer chosen from methacrylic and acrylic esters modified with epoxide groups or hydroxyl groups and the anhydrides of acrylic and methacrylic acids, amides of acrylic and methacrylic acids and their isobutoxy ethers and n-butoxy ethers, ethylenically unsaturated monocarboxylic and dicarboxylic acids and their anhydrides and amides, ethylenically unsaturated sulfonic acids and their salts, vinyl sulfonic acids, vinyl chlorides, monounsaturated or polyunsaturated olefins and acryloxypropyltri(alkoxy)silanes, methacryloxypropyltri(alkoxy)silanes, and vinyltrialkoxysilanes.

17. (Currently amended) Process according to claim 12 wherein the one or more copolymers having one or more carbonyl groups, wherein at least one of the one or more carbonyl groups are chosen from aldehyde and keto groups, are chosen from vinyl ester-ethylene copolymers having an ethylene content of from 1 to 60% by weight,

vinyl ester-ethylene-(meth)acrylic ester copolymers having an ethylene content of from 1 to 40% by weight and a (meth)acrylic ester content of from 0.1 to 30% by weight,

vinyl acetate copolymers having from 0 to 60% by weight of one or more monomers from the group consisting of vinyl esters,

vinyl ester-(meth)acrylic ester copolymers having from 20 to 90% by weight of vinyl esters and from 0.1 to 50% by weight of one or more monomers from the group consisting of (meth)acrylic esters,

vinyl ester copolymers with esters of fumaric or maleic acid,

(meth)acrylic ester copolymers having one or more (meth)acrylic ester monomers,

styrene-(meth)acrylic ester copolymers having a styrene content of from 0.1 to 70% by weight,

styrene-butadiene copolymers having a styrene content of from 1 to 70% by weight,

vinyl chloride copolymers with vinyl esters and/or ethylene and/or (meth)acrylates.

18. (Previously presented) Process according to claim 12 wherein at least one protective colloid is at least a polyvinyl alcohol.
19. (Previously presented) Process according to claim 12 further comprising adding the thermal insulation adhesives and reinforcing mortars to a thermally insulating foam composite system.
20. (Previously presented) Process according to claim 19 wherein the composite system is a polystyrene board composite system.
21. (Previously presented) Adhesive comprising:
 - 5 to 80% by weight of fillers and/or lightweight fillers,
 - 5 to 80% by weight of mineral binders,
 - 0.5 to 50% by weight of redispersible dispersion powder having one or more copolymers stabilized with at least one protective colloid, wherein the one or more copolymers have one or more carbonyl groups and at least one of the one or more carbonyl groups are chosen from aldehyde and keto groups, and
 - 0.1 to 2% by weight of thickeners.

REMARKS

Claims 12-21 are pending in the application. Claims 12-21 are rejected. Claim is amended to . Support for this amendment is found at p. , line of the Specification.

No new matter is introduced by these amendments.

Reply to the Objection of Claim 17

The Examiner has objected to claim 17 for being of improper dependent form due to failing to further limit the subject matter of a previous claim. Claim 17 depends from claim 12. Claim 17 is directed towards the copolymers formed from the polymerization of one or more monomers having one or more carbonyl groups, wherein at least one of the one or more carbonyl groups are chosen from aldehyde and keto groups. Claim 17 has been amended to state that the copolymer, like the monomers of claim 12, have one or more carbonyl groups, wherein at least one of the one or more carbonyl groups are chosen from aldehyde and keto groups. It is believed that this amendment overcomes the Examiner's objection to claim 17. Withdrawal, therefore, of this objection is respectfully requested.

Reply to the Rejection of Claims 12-18 under 35 U.S.C. § 102(a)

The Examiner has rejected claims 12-18 as being anticipated by U.S. Patent No. 6,063,865 to Ball *et al.* ("Ball"). For the following reasons, Applicants respectfully traverse the Examiner's rejection of claims 12-18 as being anticipated by Ball.

Ball is directed towards crosslinkable powder compositions that are redispersible in water. These powders are formed by polymerizing one or more ethylenically unsaturated monomers, wherein from 0.5 to 10% by weight of the monomers, based on total weight of the polymer, have one or more substituents selected from the group consisting of aldehyde, keto, epoxide, isocyanate, carboxylic anhydride and aziridine groups (Abstract). Preparation of the polymer is preferably carried out in the presence of a protective colloid (col. 6, lines 19-20 and 47-55), with polyvinyl alcohol exemplified. The polymeric dispersion formed is then dried, preferably by spray drying (col. 6, lines 38-46). Crosslinkers are mixed in before or after drying (col. 6, lines 56-61). The resultant dispersion powder can be used in typical fields of application such as building adhesives, with binder or adhesive applications preferred (col. 7, lines 1-17).

The powders are readily redispersible in water (col. 7, lines 18-21) and can be mixed in the dry state with many formulations and ready-to-use mixtures of building materials (col. 7, lines 29-35).

In contrast to Ball, no crosslinkers are utilized in the process of the present invention. These thermal insulation adhesives must adhere onto thermally insulating material such as expanded polystyrene boards, which has a very low surface energy.

Accordingly, as Ball does not teach each and every element of the present invention, it cannot be said that Ball anticipates the presently claimed invention.

It is believed that these remarks overcome the Examiner's rejection of claims 12-18 as being anticipated by Ball. Withdrawal, therefore, of the rejection of claims 12-18 under 35 U.S.C. § 102(a) is respectfully requested.

Reply to the Rejection of the Claims under 35 U.S.C. § 103(a)

U.S. Patent Publication No. 2003/0065079 to Weitzel et al. -

The Examiner has rejected claims 12-21 as being unpatentable over U.S. Patent Publication No. 2003/0065079 to Weitzel *et al.* ("Weitzel"). For the following reasons, Applicants respectfully traverse the Examiner's rejection of claims 12-21 as being unpatentable over Weitzel.

Weitzel is directed towards a sequential emulsion polymerization process having two different steps (step one, see [0013]; step two, see [0014]). Such polymerization processes are much more complex than standard polymerization processes as used in the current invention. For example, in the Weitzel process the monomer conversion after the first step must be measured (see [0013] "... to a conversion of from 90 to 100% ...").

In contrast, the currently claimed process uses only standard emulsion polymerization techniques (by "...forming one or more copolymers ... stabilizing the one or more copolymers with at least one protective colloid...."). Hence, all polymers formed according to the present process must be stabilized with a protective colloid after polymerization, which is not the case in Weitzel, since the protective colloid is added up front ([0012], last sentence - "in the presence of").

It is believed that these remarks overcome the Examiner's rejection of claims 12-21 as being unpatentable over Weitzel. Withdrawal, therefore, of the rejection of claims 12-21 under 35 U.S.C. § 103(a) is respectfully requested.

Weitzel 2 in view of Ball –

The Examiner has rejected claims 12-21 as being unpatentable over U.S. Patent Publication No. 2003/0032711 to Weitzel ("Weitzel 2") in view of Ball. For the following reasons, Applicants respectfully traverse the Examiner's rejection of claims 12-21 as being unpatentable over Weitzel 2 in view of Ball.

Weitzel 2 teaches that its powders are useful in thermal insulation as cement-free building adhesives ([0037]). Such cement-free building adhesives typically have an approximately neutral pH. However, the powder disclosed by Ball must be used in the presence of alkaline materials (col 7, lines 2-3). Hence, it is not obvious for the skilled person to use Ball's powder in Weitzel's process. See also the comments above to Ball's reference.

It is believed that these remarks overcome the Examiner's rejection of claims 12-21 as being unpatentable over Weitzel in view of Ball. Withdrawal, therefore, of the rejection of claims 12-21 under 35 U.S.C. § 103(a) is respectfully requested.

U.S. Publication No. 2002/0162485 to Jodlbauer et al. in view of Ball –

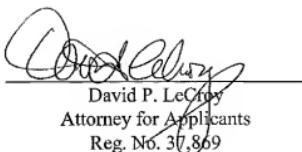
The Examiner has rejected claims 12-19 and 21 as being unpatentable over U.S. Publication No. 2002/0162485 to Jodlbauer *et al.* ("Jodlbauer") in view of Ball. For the following reasons, Applicants respectfully traverse the Examiner's rejection of claims 12-19 and 21 as being unpatentable over Jodlbauer in view of Ball.

Jodlbauer is directed towards dry mortars containing cement, fillers, thickeners, redispersible polymer powders and one or more zinc salts (Abstract). It is not obvious for the skilled person to omit this zinc salt and use Ball's powder as the redispersible powder in Jodlbauer without Balls nitrogen salt crosslinker.

It is believed that these remarks overcome the Examiner's rejection of claims 12-19 and 21 as being unpatentable over Jodlbauer in view of Ball. Withdrawal, therefore, of the rejection of claims 12-19 and 21 under 35 U.S.C. § 103(a) is respectfully requested.

Based on the above amendments and remarks, allowance of the claims is believed to be in order, and such allowance is respectfully requested.

Respectfully submitted,



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Dated: 25 April 2003
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